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TITLE : COMMUTATOR FOR FUEL PUMP OF MOTORCAR

ABSTRACT : PURPOSE: To increase resistance to mechanical and electrical abrasion and improve the electric conductivity of the title commutator by employing a dispersion-type reinforced copper alloy for the commutator of a motor for an automotive fuel pump.

CONSTITUTION: The commutator of a motor for an automotive fuel pump is formed of an alumina dispersion-type reinforced copper alloy. The alumina dispersion-type reinforced copper alloy, containing 1.0weight% of  $\text{Al}_2\text{O}_3$ , is employed to effect the operation test of the same and the reduction of the amount of abrasion of about 80% is confirmed compared with the material of the commutator so far. The physical property i of the dispersion-type reinforced copper alloy is prominent in a hardness and a tensile strength compared with the material used so far. The deterioration of mechanical properties at a high temperature is small compared with the material so far. When the content of alumina is less than 0.1weight% of  $\text{Al}_2\text{O}_3$ , sufficient hardness and tensile strength can not be obtained but when it is more than 0.1weight%, the deterioration of electric conductivity is large and, therefore, the dispersion-type reinforced copper alloy having the composition specified above is optimum for the material of the commutator.

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